

## CLAIMS

1. A wafer double-side polishing apparatus comprising at least a carrier plate having wafer holding holes; upper and lower turn tables to which polishing pads are attached; and a slurry supply means; with wafers held in the wafer holding holes, the carrier plate being moved between the upper and lower turn tables while supplying slurry, to simultaneously polish both front and back surfaces of wafers, wherein a PCD of upper turn table load supporting points that is a diameter of a circle joining load supporting points of the upper turn table coincides with a PCD of centers of the wafer holding holes on the carrier plate that is a diameter of a circle joining each center of the wafer holding holes on the carrier plate.

2. The wafer double-side polishing apparatus according to claim 1, wherein the motion of the carrier plate is a circular motion not accompanied by rotation of the carrier plate.

3. A wafer double-side polishing apparatus comprising at least a plurality of carrier plates each having wafer holding holes; sun and internal

gears for rotating and revolving the carrier plates; upper and lower turn tables to which polishing pads are attached; and a slurry supply means; with wafers held in the wafer holding holes, the plurality of carrier plates being rotated and revolved between the upper and lower turn tables while supplying slurry, to simultaneously polish both front and back surfaces of wafers, wherein a PCD of upper turn table load supporting points that is a diameter of a circle joining load supporting points of the upper turn table coincides with a PCD of carrier plate centers that is a diameter of a circle joining the centers of the plurality of carrier plates.

4. The wafer double-side polishing apparatus according to any one of claims 1 to 3, wherein a PCD of lower turn table load supporting points that is a diameter of a circle joining load supporting points of the lower turn table coincides with the PCD of the upper turn table load supporting points.

5. A wafer double-side polishing method comprising holding wafers on a carrier plate on which are formed wafer holding holes for holding

wafers; and, while supplying slurry, moving the carrier plate between upper and lower turn tables to which polishing pads are attached, to simultaneously polish both front and back surfaces of the wafers, wherein the wafers are polished with causing a PCD of upper turn table load supporting points that is a diameter of a circle joining load supporting points of the upper turn table and a PCD of wafer centers that is a diameter of a circle joining centers of the wafers held by the carrier plate to coincide with each other.

6. The wafer double-side polishing method according to claim 5, wherein the motion of the carrier plate is a circular motion not accompanied by rotation of the carrier plate.

7. A wafer double-side polishing method comprising holding wafers on a plurality of carrier plates each having thereon formed holding holes for holding wafers; and, while supplying slurry, rotating and revolving the plurality of carrier plates using sun and internal gears between upper and lower turn tables to which polishing pads are attached, to simultaneously polish both front and back surfaces of the wafers,

wherein the wafers are polished with causing a PCD of upper turn table load supporting points that is a diameter of a circle joining load supporting points of the upper turn table and a PCD of carrier plate centers that is a diameter of a circle joining centers of the plurality of carrier plates to coincide with each other.

8. The wafer double-side polishing method according to any one of claims 5 to 7, wherein a PCD of lower turn table load supporting points that is a diameter of a circle joining load supporting points of the lower turn table is caused to coincide with the PCD of the upper turn table load supporting points.

9. The wafer double-side polishing method according to any one of claims 5 to 8, wherein during the wafer polishing, the wafers are polished while controlling polishing conditions.

10. The wafer double-side polishing method according to claim 9, wherein the polishing condition control is performed by controlling the temperature of the upper turn table and/or the lower turn table.

11. A wafer double-side polishing apparatus comprising at least a carrier plate having wafer holding holes; upper and lower turn tables to which polishing pads are attached; and a slurry supply means; with wafers held in the wafer holding holes, the carrier plate being moved between the upper and lower turn tables while supplying slurry, to simultaneously polish both front and back surfaces of wafers, wherein shape adjustment means are disposed at load supporting point portions of the upper turn table.

12. The wafer double-side polishing apparatus according to claim 11, wherein the motion of the carrier plate is a circular motion not accompanied by rotation of the carrier plate.

13. The wafer double-side polishing apparatus according to claim 11 or 12, wherein a PCD of upper turn table load supporting points that is a diameter of a circle joining load supporting points of the upper turn table coincides with a PCD of centers of the wafer holding holes on the carrier plate that is a diameter of a circle joining each center of the wafer holding holes on the carrier plate.

14. A wafer double-side polishing apparatus, comprising at least a plurality of carrier plates each having wafer holding holes; sun and internal gears for rotating and revolving the carrier plates; upper and lower turn tables to which polishing pads are attached; and a slurry supply means; with wafers held in the wafer holding holes, the plurality of carrier plates being rotated and revolved between the upper and lower turn tables while supplying slurry, to simultaneously polish both front and back surfaces of wafers, wherein shape adjustment means are disposed at load supporting point portions of the upper turn table.

15. The wafer double-side polishing apparatus according to claim 14, wherein a PCD of upper turn table load supporting points that is a diameter of a circle joining load supporting points of the upper turn table coincides with a PCD of carrier plate centers that is a diameter of a circle joining centers of the plurality of carrier plates.

16. The wafer double-side polishing apparatus according to any one of claims 11 to 15, wherein the shape adjustment means are micrometers.

17. The wafer double-side polishing apparatus according to any one of claims 11 to 16, wherein materials of the turn tables are stainless steel.

18. A wafer double-side polishing method comprising holding wafers in wafer holding holes formed on a carrier plate; and while supplying slurry, moving the carrier plate between upper and lower turn tables to which polishing pads are attached, to simultaneously polish both front and back surfaces of the wafers, wherein the wafers are polished while controlling the turn table shape by adjusting the slurry supply amount.

19. The wafer double-side polishing method according to claim 18, wherein the motion of the carrier plate is a circular motion not accompanied by rotation of the carrier plate.

20. A wafer double-side polishing method comprising holding wafers on a plurality of carrier plates each having thereon formed holding holes for holding wafers; and while supplying slurry, rotating and revolving the plurality of carrier plates using sun and internal gears between upper and lower turn tables to which

polishing pads are attached, to simultaneously polish both front and back surfaces of the wafers, wherein the wafers are polished while controlling the turn table shape by adjusting the slurry supply amount.

21. The wafer double-side polishing method according to any one of claims 18 to 20, wherein the slurry supply amount is adjusted depending on usage time of the polishing pads.

22. A wafer double-side polishing method comprising holding wafers in wafer holding holes formed on a carrier plate; and while supplying slurry, moving the carrier plate between upper and lower turn tables to which polishing pads are attached, to simultaneously polish both front and back surfaces of the wafers, wherein shape adjustment means are disposed at load supporting point portions of the upper turn table, and wherein the wafers are polished while controlling the turn table shape by adjusting the shape adjustment means.

23. The wafer double-side polishing method according to claim 22, wherein the motion of the carrier plate is a circular motion not



accompanied by rotation of the carrier plate.

24. A wafer double-side polishing method comprising holding wafers on a plurality of carrier plates each having thereon formed holding holes for holding wafers; and while supplying slurry, rotating and revolving the plurality of carrier plates using sun and internal gears between upper and lower turn tables to which polishing pads are attached, to simultaneously polish both front and back surfaces of the wafers, wherein shape adjustment means are disposed at load supporting point portions of the upper turn table, and wherein the wafers are polished while controlling the turn table shape by adjusting the shape adjustment means.

25. The wafer double-side polishing method according to any one of claims 22 to 24, wherein the wafers are polished while controlling the turn table shape by adjusting supply amount of the slurry supplied.

26. The wafer double-side polishing method according to any one of claims 18 to 25, wherein the wafers are polished with causing a PCD of upper turn table load supporting points that is a

diameter of a circle joining load supporting points of the upper turn table and a PCD of wafer centers that is a diameter of a circle joining centers of the wafers held by the carrier plate to coincide with each other, or causing the PCD of upper turn table load supporting points and a PCD of carrier plate centers that is a diameter of a circle joining centers of the plurality of carrier plates to coincide with each other.